

Branch Name:	B.Sc. Chemistry
Program Code:	SC103
Course Name:	INORGANIC CHEMISTRY-I
Course Code:	2SC1030501
Pre-requisite Course:	Fundamentals of Chemistry (up to S.Y. B.Sc.)

Course Objectives:

1. To meet the growing demand of Advanced Courses in Industrial chemistry.
2. To help the colleges to update and modernize their laboratories.
3. To redesign the courses the special emphasis on local requirements, environment, to link the courses with requirements of the industries and research.
4. Comprehension of principles of industrial chemistry and learning of current applications.
5. The primary goal of this course is to make students aware of how chemical process can be designed, developed and employed in as sustainable manner.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme(Marks)				
Lecture(L)	Tutorial(T)	Practical(P)	Credit	Theory (Marks)		Practical(Marks)		Total Marks
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
3	--	-	2	70	30	-	-	100

Subject Contents:

Sr. No	Topic	Lectures	Weightage
1	Inorganic polymers Definition and depiction of polymers, classification of inorganic polymers, characteristics of inorganic polymers, characterization of inorganic polymers, Physical properties (by molecular weight, number average & weight average), structural features: (1) Backbone bonding (2) Branching & cross-linking (3) chemical & stereo chemical variability. Glass transition temperature, Phosphorus-based polymers, Sulphur-based polymers.	15	33%
2	Organo Metallic Compounds Definition, Types of O.M.C, Classification, Hepticity of O.M.C, Nomenclature of O.M.C, Structure and bonding in dihapto and metal olifines complexes. e.g. Ziese's salt complexes, ferrocine structure, O.M.C. of Li and Al complexes.	18	34%
3	Symmetry of molecules Symmetry elements & symmetry operations, Multiplications of symmetry operations, Multiplication table for C _{2v} , C _{3v} , C _{2h} point groups only, Classification of schoenflies point groups, Determination of schoenflies point groups notations.	15	33%

Learning Outcomes

Students can understand the atomic and molecular basis of Inorganic chemistry. They can know the impact of inorganic chemistry on the fields of medicine, pharmacy and its impact on the global economy. They can understand the fundamental principles of molecular structure and shape as they relate to organic molecules and their properties.

LIST OF BOOKS:

1. Valence and molecular structure by Cartmell and Flower.
2. Text book of Inorganic Chemistry by Duren and Duren.
3. Selected Topics in Inorganic Chemistry by Wahid V. Malik, Tuli, Madan.
4. A text book of inorganic polymers by Dr. Ajay Bhagi (Himalay Publishing House Pvt.Ltd)
5. Inorganic Chemistry by S. Chand.
6. Advance Inorganic Chemistry Vol-II Satya Prakash (S.Chand)
7. Concise Inorganic chemistry by J.D.Lee.
8. Metallic Corrosion By M.N. Desai
9. Advance Inorganic Chemistry J.E. Huhe. Symmetry in chemistry by Jafle and Orchin
10. Symmetry in chemistry by Jafle and Orchin

List of Open Source Software/learning website:

1. <https://swayam.gov.in>
2. <https://nptel.ac.in>
3. <http://onlinelibrary.wiley.com>
4. https://en.wikipedia.org/wiki/Main_Page

Course Learning Outcomes (CLO):On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	To learn the characteristics of inorganic polymer and characterization of physical properties .To understand structural features of polymers by different bonding.	Learning & understanding
CLO2	To understand general structures and related complexes of OMC. Study of their properties.	Understanding & analyze
CLO3	Learn symmetry of molecules and their point groups.	Learning
CLO4	Learn and applying advance inorganic polymers	Learning & applying
CLO5	Applying application of newly conceptual inorganic polymers and OMC complexes.	Applying & evalute

Mapping of CLOs with POs &PSOs

Course Learning Outcomes	ProgramOutcomes(POs)								
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CLO1	H	M	H	M	M	L	M	M	L
CLO2	H	M	M	M	M	H	M	L	L
CLO3	H	L	L	L	M	L	L	L	H
CLO4	M	H	H	H	H	L	H	H	L
CLO5	M	H	M	H	H	H	M	H	L

H:High,M:Medium,L:Low